

REMARKS

Claims 1, 3-8, and 10-15 are pending. Reconsideration and allowance of claims 1, 3-8, and 10-15 are respectfully requested.

In the Office Action dated April 3, 2006, claims 1, 3, 5-10, and 12-15 were rejected under 35 U.S.C. § 102(b) as being anticipated by Koster et al. (European Patent Application Publication No. 1 223 468 A1). Applicants respectfully traverse this rejection.

Independent claim 1 recites a lithographic apparatus that includes, *inter alia*, an illumination system that includes, *inter alia*, “a radiation-production system that produces extreme ultra-violet radiation, wherein particles produced as a by-product of extreme ultra-violet radiation production move substantially in a particle-movement direction; and a radiation-collection system that collects the extreme ultra-violet radiation, the radiation-collection system being arranged to collect extreme ultra-violet radiation which radiates in a collection-direction, the collection-direction being substantially different from the particle-movement direction, wherein the radiation-production system comprises two oppositely chargeable electrodes that generate an electric field therebetween, and the electric field substantially follows an axial direction of the radiation-production system.” Koster et al. does not disclose or suggest all of the features of claim 1.

Koster et al. teaches a radiation source (LA) that produces a beam of radiation (PB) that is fed into an illuminator (IL). *See* Koster et al. at [0022], [0026]; FIGs. 1 and 2. The emission source (10) within the radiation source (LA) also emits a beam of contaminant particles (11) that travels with the beam of radiation (PB). *See* Koster et al. at [0027]; FIG. 2. It is unclear from the Office Action what part of the apparatus of Koster et al. that the Examiner believes to be a radiation-collection system. Applicants respectfully submit that Koster et al. is silent as to the use of a radiation-collection system that collects extreme ultra-violet radiation. As such, Koster et al. does not disclose or suggest “a radiation-collection system that collects the extreme ultra-violet radiation, the radiation-collection system being arranged to collect extreme ultra-violet radiation which radiates in a collection-direction, the collection-direction being substantially different from the particle-movement direction,” as recited by claim 1.

Accordingly, Applicants respectfully submit that claim 1 and the claims that depend from claim 1 are patentable over Koster et al., and respectfully request that the rejection to claims 1, 3, and 5-7 be withdrawn.

Independent claim 8 recites an illumination system for providing a beam of radiation. As recited by claim 8, the illumination system includes, *inter alia*, “a radiation-collection system that collects the extreme ultra-violet radiation, the radiation-collection system being arranged to collect extreme ultra-violet radiation which radiates in a collection-direction, the collection-direction being substantially different from the particle-movement direction, wherein the radiation-production system comprises two oppositely chargeable electrodes that generate an electric field therebetween, and the electric field substantially follows an axial direction of the radiation-production system.” Koster et al. does not disclose or suggest all of the features of claim 8.

Koster et al. is discussed above. Koster et al. does not disclose or suggest an illumination system that includes a radiation-collection system, wherein the radiation-collection system is arranged to collect extreme ultra-violet radiation which radiates in a collection-direction, with the collection-direction being substantially different from the particle-movement direction, as recited by claim 8.

Accordingly, Applicants respectfully submit that claim 8 and the claims that depend from claim 8 are patentable over Koster et al., and respectfully request that the rejection to claims 8, 10, and 12-14 be withdrawn.

Independent claim 15 recites a method for providing a beam of radiation that includes, *inter alia*, “collecting extreme ultra-violet radiation that radiates in a collection direction, said collection direction being substantially different from said particle-movement direction; and generating an electric field along said particle-movement direction, wherein the electric field substantially follows an axial direction of the radiation-production system.” Koster et al. does not disclose or suggest all of the features of claim 15.

Koster et al. is discussed above. Koster et al. simply does not disclose or suggest a method for providing a beam of radiation that includes collecting extreme ultra-violet radiation that radiates in a collection direction, with the collection direction being substantially different from the particle-movement direction.

Accordingly, Applicants respectfully submit that claim 15 is patentable over Koster et al., and respectfully request that the rejection to claim 15 be withdrawn.

In the Office Action, claims 1, 3, 5-10, and 12-15 were rejected under 35 U.S.C. §102(e) as being anticipated by Koster et al. (U.S. Patent No. 6,614,505, hereinafter “the ‘505 patent”). Applicants respectfully traverse this rejection.

Independent claim 1 is discussed above. The '505 patent does not disclose or suggest all of the features of claim 1.

The '505 patent teaches a radiation source (LA) that produces a beam of radiation (PB) that is fed into an illuminator (IL). *See* the '505 patent at col. 6, lns. 7-21; FIGs. 1 and 2. The emission source (10) within the radiation source (LA) also emits a beam of contaminant particles (11) that travels with the beam of radiation (PB). *See* the '505 patent at col. 7, lns. 12-31; FIG. 2. It is unclear from the Office Action what part of the apparatus of the '505 patent that the Examiner believes to be a radiation-collection system. Applicants respectfully submit that the '505 patent is silent as to the use of a radiation-collection system that collects extreme ultra-violet radiation. As such, '505 patent does not disclose or suggest "a radiation-collection system that collects the extreme ultra-violet radiation, the radiation-collection system being arranged to collect extreme ultra-violet radiation which radiates in a collection-direction, the collection-direction being substantially different from the particle-movement direction," as recited by claim 1.

Accordingly, Applicants respectfully submit that claim 1 and the claims that depend from claim 1 are patentable over the '505 patent, and respectfully request that the rejection to claims 1, 3, and 5-7 be withdrawn.

Independent claim 8 and the '505 patent are discussed above. The '505 patent does not disclose or suggest an illumination system that includes a radiation-collection system, wherein the radiation-collection system is arranged to collect extreme ultra-violet radiation which radiates in a collection-direction, with the collection-direction being substantially different from the particle-movement direction, as recited by claim 8.

Accordingly, Applicants respectfully submit that claim 8 and the claims that depend from claim 8 are patentable over the '505 patent, and respectfully request that the rejection to claims 8, 10, and 12-14 be withdrawn.

Independent claim 15 and the '505 patent are discussed above. The '505 patent simply does not disclose or suggest a method for providing a beam of radiation that includes collecting extreme ultra-violet radiation that radiates in a collection direction, with the collection direction being substantially different from the particle-movement direction.

Accordingly, Applicants respectfully submit that claim 15 is patentable over the '505 patent, and respectfully request that the rejection to claim 15 be withdrawn.

In the Office Action, claims 4 and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Koster et al. Applicants respectfully traverse this rejection.

Claim 4 depends from claim 1. As discussed above, Koster et al. does not disclose or suggest all of the features of claim 1, thereby making claim 1 and the claims that depend from claim 1 patentable over Koster et al.

Claim 11 depends from claim 8. As discussed above, Koster et al. does not disclose or suggest all of the features of claim 8, thereby making claim 8 and the claims that depend from claim 8 patentable over Koster et al.

Accordingly, Applicants respectfully request that the rejection to claims 4 and 11 be withdrawn.

All rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP



EMILY T. BELL  
Reg. No. 47,418  
Tel. No. 703.770.7661  
Fax No. 703.770.7901

Date: June 30, 2006  
P.O. Box 10500  
McLean, VA 22102  
703.770.7900